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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,950	08/28/2001	Peter J. Melsa	TI-32877	5189

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Dennis Moore at Texas Instruments Incorporated
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EXAMINER

CHANG, EDITH M

ART UNIT	PAPER NUMBER
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2637

DATE MAILED: 08/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/940,950	MELSA, PETER J.	
	Examiner	Art Unit	
	Edith M. Chang	2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 11-17 is/are rejected.
- 7) ☒ Claim(s) 6-10 and 18-22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 16-22 are objected to because of the following informalities:

Claim 16, line 2: "peak of said received" should be "peak portion of said oversampled", "peak exceeds" should be "peak portion exceeds".

Claim 20, lines 6 & 7: "first peak" should be "first peak portion".

Claims 17-19 and 21-22 are dependent on the objected claims 16 and 20.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12, line 2: "is a first modified peak portion below said predetermined threshold" does not clearly indicate what is a first modified peak portion below said predetermined threshold and "said peak portion width results" lacks antecedent basis, what is the "said peak portion width results".

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-5 and 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warburton et al. (US 5,873,054) in view of McCullough (US 6,166,567).

Regarding **claims 1 & 11**, in FIG.2, Warburton et al. discloses an apparatus 25 & 27 with it method to process a digitized high speed signal from the detector and peamplifier 20 via the A/D,D/A conversion 24.

In FIG.4, the diagram of the FIPPI 25 of FIG.2 (column 14, lines 14-15) of which the timing diagrams FIG.8A-8G (column 7, lines 49-52), the apparatus comprises:

Decimator 97, slow filter 98, and fast filter 105 (as the buffer) to buffer the digitized input signal provide by the ADC on the ADCBUS 50 (column 14, lines 15-17), wherein the slow filter processing the D_factor reduced data rate incoming signal (column 14, lines 17-21) and delaying the digitized input signal;

Peak detector 107 operable to determine a peak, 198 at T4 and 196 at T3 FIG.8A (198 is the first peak) for the digitized input signal exceeding the 195 of FIG.8A (column 19, lines 32-36), wherein the threshold level 195 produced by both the MIN_WIDTH 113 and the THRESHOLD 113 (FIG.4, column 10, lines 16-18) and determining a width of the peak TW of FIG.8A (column 20 lines 26-31);

Output buffer 100 and Pile-up checker 108 (as the modifying unit) receiving an indication from the output of the peak detector 107, applying and varying a variable width first shaping response (the pulse shape of 196s) to the peak in FIG.8D (column 19, lines 17-21) and FIG.8G (column 19, lines 25-27), wherein the peak of the digitized input signal is shaped by the variable width shaping response (width varied from TW to TM) applied by the pile-up checker 110.

However, Warburton et al. does not explicitly specify the well-known oversampling technique of digitizing signal. In FIGURE 6, McCullough teaches the over sampled digitized signal. At the time of the invention, it would have been obvious to one of ordinary skill in the art to have a oversampled digitized signal taught by McCullough in Warburton et al.'s system to benefit a maximum cutoff frequency, reduce the pulse width (column 5 lines 40-49 '567) and achieve an economic solution for the task of D/A

or A/D since the oversampled digital signal can be processed by high-performance, low-cost digital circuit/filter to perform tasks that would be expensive in analog circuit.

Regarding **claims 2 & 14**, Warburton et al. teaches the amplitude/peak of the first shaping response 196 in FIG.8A-8G (column 19, lines 25-27) changed based on the difference of the threshold 195 and a peak (as shown in FIG.8G).

Regarding **claims 3-4 & 15**, Warburton et al. teaches the width including a number of samples above the threshold (FIG.9A & FF FIG.9B) provided by the digital processor FIG.4.

Regarding **claims 5 & 16-17**, in FIG.8A, Warburton et al. teaches the detector operable to determine a second peak portion (the second peaks the second TS) exceeding the threshold 195.

Regarding **claim 12**, in FIG.8F, Warburton et al. teaches a modified peak portion (pulse with TW) shaped by applying the shaping response (pulse with TM).

Regarding **claim 13**, Warburton et al. teaches the first shaping response provided by the fast filter path 105, 107 and 108 FIG.4 being indicative of the width of the first peak (column 14 lines 46-52), wherein the minimum peak width 113 and fast peak maximum width indicating the width of the first peak.

Allowable Subject Matter

7. Claims 6-10 and 18-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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8. Claims 20-22 would be allowable if rewritten to overcome the objection(s) set forth in this Office action.

9. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach or suggest, alone or in a combination, among other things, at least a system, an apparatus and its method for peak-to-average reduction of an oversampled signal as a whole, the combination of elements and features, which including a second modifying unit applying a second shaping response to the second peak portion of the oversampled signal, or applying a first echo modifier having a variable scale subsequent to applying of a first shaping response to the first peak portion, or a shape canceller coupled to the receiver portion of a transceiver to receive an indication from a transmit peak detector and operable to apply a variable scale cancellation signal subsequent to apply a first shape modifier to a first peak portion of the oversampled signal.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The US patent 6,609,075 by Warburton et al. is made of record of describing a system for detecting and pulse shaping of the signal received via a preamplifier.

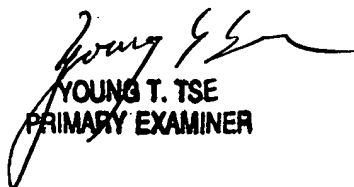
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M. Chang whose telephone number is 571-272-3041. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay K. Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

August 15, 2005


YOUNG T. TSE
PRIMARY EXAMINER